

REMARKS

Claims 1-30 remain pending in this application. Additionally, new claims 31-35 have been added and claims 1-4, 11-14, and 21-24 have been amended. Therefore, claims 1-35 are pending in the present application.

The Examiner rejected claims 1-2, 5-7, 11-12, 15-17, 21-22, and 25-27 under 35 U.S.C. § 112 due to informalities in the claims. In light of the amendments provided to claims 1-4, 11-14, and 21-24, Applicants respectfully assert that the § 112 rejection is now moot. Therefore, independent claims 1, 11, and 21, are allowable for at least the reasons cited above. In light of the amendments to claims 1, 11, and 21, claims 2 and 5-7, 12, 15-17, 22 and 25-27, which respectively depend from claims 1, 11, and 21, are also allowable. These amendments and the additional amendments to claims 3, 4, 13, 14, 23, and 24, have been amended to correct an informality therein and is not made for purposes of patentability. The amendment is not presented to overcome any rejection or to distinguish the claim over the prior art.

The Examiner rejected claims 1-30 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,410,162 (*Tigelaar*). Applicants respectfully traverse this rejection.

Applicants respectfully assert that *Tigelaar* does not disclose or suggest all of the elements called for by claim 1 of the present invention. *Tigelaar* does not disclose modeling a characteristic parameter using a correlation model to modify a process performed on a workpiece, as called for by claims of the present invention. As called for in claim 2 of the present invention, one example of the characteristic parameter that is measured is a characteristic parameter measured at a wafer electrical test. Also, as called for by claim 3, one example of a

process performed on the workpiece may include a rapid thermal processing. The Examiner cites *Tigelaar* since it discloses electrical tests and a rapid thermal process. However, *Tigelaar* does not disclose modeling characteristics (e.g., electrical tests) using a correlation model and applying the correlation model to modify a process performed (e.g., rapid thermal process).

Tigelaar discloses electrical probe needles 22, which come into contact with the top surface of the wafer for measuring electrical tests. See column 4, lines 54-56. *Tigelaar* is directed toward measurement of temperature-dependent phenomena that may be tested with the apparatus disclosed in *Tigelaar*. See column 5, lines 11-14. *Tigelaar* discloses that the RTP eliminator 20 for performing an rapid thermal process (RTP). *Tigelaar* also discloses that probe needles 22, which are used for measuring electrical characteristics, are located below and above the wafer support respectively. *Tigelaar* provides this to detect electrical characteristics while the rapid thermal process is taking place. See column 5, lines 31-41. *Tigelaar* provides that an RTP eliminator is used to rapidly elevate temperature on the wafer and that the wafer is held at a particular temperature, and a voltage is then applied using the probes to measure characteristics. The wafer is then allowed to cool and again, voltage is applied to measure the same characteristics. See column 5, lines 1-10. Hence, *Tigelaar* is directed towards measuring characteristics to study the temperature dependent phenomena, which actually directs those skilled in the art away from various claims of the present invention, as described below.

In contrast to *Tigelaar*, claim 1 of the present invention calls for modeling the characteristic parameter using a correlation model and then using the correlation model to modify the processing performed on a semiconductor wafer. As called for by dependent claims 2-10, the present invention also calls for performing wafer electrical tests after the rapid thermal process

has been completed. In contrast, *Tigelaar* is actually directed towards performing wafer tests during the rapid thermal process to examine the temperature dependent phenomena. Therefore, *Tigelaar* actually directs one away from several claims of the present invention.

In fact, *Tigelaar* does not disclose modeling any features, unlike the subject matter of claims of the present invention. Furthermore, *Tigelaar* does not correlate a correlation model to correlate any factors. Therefore, *Tigelaar* does not disclose all of the elements of claim 1 of the present invention. Additionally, independent claims 11 and 21, as well as newly added independent claims 31, 33, and 35, which call for various apparatuses and methods that call for performing rapid thermal process and modeling electrical parameters using a correlation model to control the rapid thermal process, are also allowable for at least the reasons cited above.

Independent claims 1, 11, 21, 31, 33, and 35 are allowable for at least the reasons cited above. Additionally, dependent claims 2-10, 12-20, 22-30, 32 and 34, which depend from independent claims 1, 11, 21, 31, and 33, respectively, are also allowable for at least the reasons cited above.

Reconsideration of the present application is respectfully requested.

In light of the arguments presented above, Applicants respectfully assert that claims 1-35 are allowable. In light of the arguments presented above, a Notice of Allowance is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Houston, Texas telephone

number (713) 934-4069 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

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